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MSC2019H
Assignment #1

Medium

Web (1366 x 786px – most common desktop screen resolution since January 2015[1]) – for use in suicide/mental health awareness campaign

Target audience

General public (lay)

Design Rationale

Total provincial prevalence (all Indigenous identities combined) data is represented using a choropleth map, a visualization technique appropriate for both spatial (province/location) and continuous (percentages) data[2]. Lightness information alone encodes the relative values of each province. While lightness is low in the hierarchy of elementary perceptual tasks[3], a highly accurate comparison of the differences among provinces is not necessary to understand the message of this particular visualization.

Provincial prevalence by Indigenous identity data is represented using a radial bar chart. This visualization strategy allows for relatively accurate judgements of differences in data, as humans are quite good at detecting differences in items positioned along nonaligned scales[3]. An accurate judgement of differences in data seems to be of particular importance for datasets where differences in datapoints are small (such as this one). Canada-wide prevalence data, encoded as rings, can provide points of reference when making comparisons between non-adjacent provinces. The principles of similarity (in colour) and proximity are used to group the data by Indigenous identity and by province. To a certain extent, the principle of proximity is also used to link Indigenous identity data with provincial prevalence data in the choropleth map.

The hues used for the provincial prevalence by Indigenous identity data come from the medicine wheel, a symbol with pan-Indigenous significance. Some of these colours (red, green) also correspond to hues which the human eye is highly adept at differentiating due to the quantities of short- and medium-wavelength cones present in the human retina[2].

Prevalence by age and sex data is represented using a population pyramid, a visualization strategy that allows for highly accurate judgements of differences in data due to humans' superior ability to perceive differences in items positioned along a common scale [3]– this helps show very small differences in data that may exist. The principle of similarity (in colour and position) is used to group the data by Indigenous group and by age bracket, and the principle of proximity is used to group data by sex and province. The provinces are listed in the general order they would be read when reading a map left to right, a direction which is intuitive in Western countries. The x-axis is left unlabeled as the values represented in this chart are normalized; as such, they are not a meaningful representation of the actual prevalence of suicidal thoughts.

The hues used for the prevalence by age and sex data are again based on the medicine wheel. First Nations data in encoded with distinct hues of red – while the principle of similarity groups them (all red hues) into a larger category (Indigenous identity), their distinctiveness from one another lends to their representation of different sub-categories (age group).

Finally, a dark background was used to maximize contrast with foreground elements. It helps bring the information forward and facilitates judgements of differences in data in many of the visualizations.

References

1. W3School. Browser Display Statistics. *Refsnes Data* (2019). Available at: http://www.w3schools.com/browsers/browsers_display.asp. (Accessed: 20th September 2001)

2. *MSC2019H Course Notes*. (2019).

3. Cairo, A. *The Functional Art: An Introduction to Information Graphics and Visualization*. (New Riders, 2013).